Dactylis glomerata
Orchardgrass
Poaceae

Dactylis glomerata is a widespread perennial grass, originally from Eurasia. It is a highly competitive species, and has occasionally been grown with alfalfa in order to keep weeds out of the stand (e.g, Spandl et al., 1997), or tree species out of electrical utility right-of-way (Brown, 1995). Its ability to hybridize is thought to contribute to its adaptative versatility (Volaire, 1995). Populations of orchardgrass from the Mediterranean demonstrate different strategies in reponse to drought conditions: they enter a summer semi-dormant state, whereby individuals maintain relatively high tiller density and accumulate significant levels of carbohydrates, which are then used for active growth in the fall; or they remain active during the summer drought, and undergo high levels of mortality (Volaire, 1995). These latter populations are unadapted to Mediterranean dry environments. Invading orchardgrass in California habitats with a similar climate regime, then, may have originated from the more drought-adapted lineages of *Dactylis glomerata*. In general, while *D. glomerata* tends to be most productive on nutrient-rich sites, it persists across a wide range of ecological conditions.

Short day lengths are satisfactory to induce flowering in *D. glomerata*; at no stage of development is any cold needed for flowering in this species (Heide, 1994).

The deeper in the soil profile *D. glomerata* seed is buried, the lower the percent germination (Andrews et al., 1997). These authors also found that the ability of *D. glomerata* to emerge from soil was not related to its mesocotyl length. Generally, they found that *D. glomerata* tends to have lower percent emergence than other range grasses (e.g., *Lolium multiflorum*, *Bromus willdenowii*, and *Festuca arundinacea*).

Dactylis glomerata has a high relative growth rate compared to other species of grasses with which it co-occurs in its native range (e.g., *Bromus erectus* and *Arrhenatherum elatius*), whether conditions are high- or low-nutrient (Ryser and Notz, 1996). Although this ability leads to competitive advantage in the short-term, it also means that under low nutrient conditions this rapid growth and associated nutrient losses may not be sustained. That is, rapidly growing plants with short organ-life span experience high nutrient loss and must have high resource availability to compensate for those losses. It may be more efficient, then, to concentrate on control in those sites which are more fertile, because competition with other grasses may constrain populations of *D. glomerata* in the less fertile sites.

Epichlor typhina, the cause of choke disease, was first reported in the US in Oregon in 1996. This disease is important in France, where it reduces seed yields of orchardgrass (Alderman et al., 1997). Wild and cultivated perennial grasses like orchardgrass are thought to be a large and permanent source of the barley yellow drawf virus for cereal crops (Kendall et al., 1996). Another disease in orchardgrass, cocksfoot virus, causes chlorotic streaking in leaves and affects the growth habit of plants grown singly and in swards (Torrance et al., 1994).

Literature cited:

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